The Journal

OF THE

Royal Aeronautical Society

With which is incorporated The Institution of Aeronautical Engineers

A Monthly Illustrated Magazine devoted to all subjects connected with the Navigation of the Air.

EDITED FOR THE

COUNCIL OF THE ROYAL AËRONAUTICAL SOCIETY

BY

Captain J. LAURENCE PRITCHARD, Hon. Fellow.

VOL. XL.

1936.

Printed by the Lewes Press (Wightman & Co., Ltd.), Friars Walk, Lewes, and published by the Royal Aëronautical Society, 7, Albemarle Street, Piccadilly, London, W.1.

1605 v40

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Petrol Systems in Aeroplanes of the Acrobatic Class (Abstract from *l'Aerophile*, May, 1935), *J.*, XL., p. 136.

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Guide for Flying Instructors. Published by the Guild of Air Pilots and Air Navigators of the British Empire, *J.*, XL., p. 797.
Handbuch der Meteorologischen Instrumente, Edited by E. Kleinschmidt, *J.*, XL., p. 333.
High Failure by John Grierson, *J.*, XL., p. 905.
How to Build Flying Boat Hulls and Seaplane Floats by J. Streeter, *J.*, XL., p. 334.
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An Introduction to the Theory of Elasticity by Prof. R. V. Southwell, *J.*, XL., p. 407.
Jane's All the World's Aircraft, 1935, Edited by C. G. Grey, *J.*, XL., p. 157.
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Machine Drawing for Students by F. J. Price, *J.*, XL., p. 333.
Maintenance of High-Speed Diesel Engines by A. W. Judge, *J.*, XL., p. 562.
Manual of Meteorology. Vol. II. Comparative Meteorology. 2nd Edition. By Sir Napier Shaw, *J.*, XL., p. 746.
The New Model Aeroplane Manual by L. H. Sparey and C. A. Rippon, *J.*, XL., p. 798.
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Detection of Frequency Modulated Waves (Abstract from *Proc. Inst. Rad. Eng.*, Vol. 23, No. 5), *J.*, XL., p. 146.

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Theory of Electron Gun (Abstract from *Proc. Inst. Rad. Eng.*, Vol. 22, No. 12), *J.*, XL., p. 146.

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Ultra-Short Wave Transmission Phenomena (Abstract from *Bell Tele. Pubs.*, No. B.870, 1935), *J.*, XL., p. 145.

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Vacuum Tubes for Ultra-High Frequencies (Abstract from *Proc. Inst. Rad. Eng.*, Vol. 23, No. 3), *J.*, XL., p. 42.

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Printed in Great Britain by The Lewes Press (Wightman & Co., Ltd.), Lewes.